IBM®

offers
systems analysts and programmers
the opportunity to design large-scale operational computer systems

Candidates should have a college degree or or equivalent and a minimum of 2 years' experience designing computers systems or programs.

Current assignments are on
Real Time Scientific Systems
Real Time Information Retrieval Systems

Specific areas of systems design include
Command Systems
Management Information Systems
Ground-Controlled Space Systems
Communications Systems
Intelligence Systems

Assignment locations are at
Bethesda, Maryland
Houston, Texas
Western United States

Other selected U. S. and overseas locations

Send your complete resume, including salary requirements, to

James H. Burg, Dept. 701H
IBM Federal Systems Division
7220 Wisconsin Avenue
Bethesda, Maryland

IBM is an Equal Opportunity Employer

DATAMATION'S FEATURE INDEX
JANUARY - JUNE, 1963

JANUARY

FORTRAN and ALGOL Revisited pg. 30
by Norman Sanders and Charles Fitzpatrick
An appraisal of what each language is supposed to do, how well each one does it, and where the conflicts lie, from the point of view of daily practicing programmers.

A Diary For Tomorrow's Programmers pg. 48
by Fred Gruenberger
This seven-page article represents an account of an instructor's experiences in teaching a course in computing to a class of 25 gifted seventh graders.

Organizing A Local Program In Computing Education pg. 57
by George G. Heller
Nine practical recommendations for initiating a community program for information processing education are offered. Additionally, listings of available movies on this subject from the "Computer Science Theater" are given.

FEBRUARY

Source Program Efficiency pg. 31
by Daniel D. McCracken
A check-list of 18 Do's and Don'ts offers some suggestions of things that can be done to make the best use of any compiler. The article points out how the source programmer can improve the efficiency of the object programs his compiler turns out for him.

The Programming Gap In Real-Time Systems pg. 39
by R. V. Head
This paper presents some of the problems which real-time system implementors have been dealing with in the areas of programming languages, control programs and system testing.

Data Collection For Business Information Processing pg. 54
by Justin A. Perlman
This five-page survey of hardware and applications includes a data collection equipment comparison chart, as well as topics on available equipment, how DC is being used, needs, selecting and installing equipment, and future trends.

CODASYL, COBOL & DETAB-X pg. 60
by Solomon L. Pollack
A report on DETAB-X, from its inception to its present status with charts on the organization of CODASYL, a sample DETAB-X procedure and a list of those who participated in the development of this language.

MARCH

The Computer & Newsprint pg. 27
by Ed Yasaki
The problems, progress and initial stirrings of the application of edp in newspaper composition as well as possibilities for the future are examined in this five-page report.

Attitudes Toward Intelligent Machines pg. 34
by Paul Armer
The first of a two-part article analyzes some of the attitudes and arguments related to questions concerning artificial intelligence in the Western World. Seven negative arguments are presented with rebuttals for each.

SHARE Internal FORTRAN Translator pg. 43
by J. J. Allen, Donald P. Moore and ~~H~~ Paul Rogoway
A four-page discussion of SIFT includes complete descriptions and explanations of this source program translator. Illustrations and examples of various translation problems are offered.

APRIL

Progress In Language Standards pg. 76
by Richard F. Clippinger
The chairman of the X3.4 Subcommittee on Programming Languages challenges the Editor's Readout criticism of ASA's lack of accomplishment.

Attitudes Toward Intelligent Machines pg. 29
by Paul Armer
Part II in this series is concerned with Soviet attitudes toward intelligent machines, with emphasis on research in the area and the importance of further concentration of it in this country.

IBM®

offers
systems analysts and programmers
the opportunity to design large-scale operational computer systems

Candidates should have a college degree or or equivalent and a minimum of 2 years' experience designing computers systems or programs.

Current assignments are on
Real Time Scientific Systems
Real Time Information Retrieval Systems

Specific areas of systems design include
Command Systems
Management Information Systems
Ground-Controlled Space Systems
Communications Systems
Intelligence Systems

Assignment locations are at
Bethesda, Maryland
Houston, Texas
Western United States

Other selected U. S. and overseas locations

Send your complete resume, including salary requirements, to

James H. Burg, Dept. 701H
IBM Federal Systems Division
7220 Wisconsin Avenue
Bethesda, Maryland

IBM is an Equal Opportunity Employer

DATAMATION'S FEATURE INDEX
JANUARY - JUNE, 1963

JANUARY

FORTRAN and ALGOL Revisited pg. 30
by Norman Sanders and Charles Fitzpatrick
An appraisal of what each language is supposed to do, how well each one does it, and where the conflicts lie, from the point of view of daily practicing programmers.

A Diary For Tomorrow's Programmers pg. 48
by Fred Gruenberger
This seven-page article represents an account of an instructor's experiences in teaching a course in computing to a class of 25 gifted seventh graders.

Organizing A Local Program In Computing Education pg. 57
by George G. Heller
Nine practical recommendations for initiating a community program for information processing education are offered. Additionally, listings of available movies on this subject from the "Computer Science Theater" are given.

FEBRUARY

Source Program Efficiency pg. 31
by Daniel D. McCracken
A check-list of 18 Do's and Don'ts offers some suggestions of things that can be done to make the best use of any compiler. The article points out how the source programmer can improve the efficiency of the object programs his compiler turns out for him.

The Programming Gap In Real-Time Systems pg. 39
by R. V. Head
This paper presents some of the problems which real-time system implementors have been dealing with in the areas of programming languages, control programs and system testing.

Data Collection For Business Information Processing pg. 54
by Justin A. Perlman
This five-page survey of hardware and applications includes a data collection equipment comparison chart, as well as topics on available equipment, how DC is being used, needs, selecting and installing equipment, and future trends.

CODASYL, COBOL & DETAB-X pg. 60
by Solomon L. Pollack
A report on DETAB-X, from its inception to its present status with charts on the organization of CODASYL, a sample DETAB-X procedure and a list of those who participated in the development of this language.

MARCH

The Computer & Newsprint pg. 27
by Ed Yasaki
The problems, progress and initial stirrings of the application of edp in newspaper composition as well as possibilities for the future are examined in this five-page report.

Attitudes Toward Intelligent Machines pg. 34
by Paul Armer
The first of a two-part article analyzes some of the attitudes and arguments related to questions concerning artificial intelligence in the Western World. Seven negative arguments are presented with rebuttals for each.

SHARE Internal FORTRAN Translator pg. 43
by J. J. Allen, Donald P. Moore and ~~H~~ Paul Rogoway
A four-page discussion of SIFT includes complete descriptions and explanations of this source program translator. Illustrations and examples of various translation problems are offered.

APRIL

Progress In Language Standards pg. 76
by Richard F. Clippinger
The chairman of the X3.4 Subcommittee on Programming Languages challenges the Editor's Readout criticism of ASA's lack of accomplishment.

Attitudes Toward Intelligent Machines pg. 29
by Paul Armer
Part II in this series is concerned with Soviet attitudes toward intelligent machines, with emphasis on research in the area and the importance of further concentration of it in this country.

The 301 & 1401—A User's Critique pg. 33

by Ed Yasaki

A comparison of the features and drawbacks of these two machines as seen by Richard E. Kurzenknabe of Tabulating Consultants, Inc., a company that employs both the 301 and 1401 in the course of its daily operation.

MAY

Correcting Obfuscations By Ordained Linguists pg. 24

by Stanley M. Naftaly

A COBOL advocate presents a 4½-page examination of COBOL as applied to areas including programming time, compiling time, object program time and response time.

Programming On-Line Systems—Part One pg. 29

by W. L. Frank, W. H. Gardner and G. L. Stock

Systems in which response times are measured in milliseconds and computer systems to which a number of interrogation and display devices are connected are discussed in this survey. Problem characteristics typical of these application areas and programming implications, highlighting hardware features which bear on the efficacy of the programming system are discussed.

Automatic Program Translation pg. 45

by Ascher Opler

Discussion of prospects and problems, including types of translation, the "impossibility" of translation, the "feasibility" of translation, symbolic translation versus code translation and target program efficiency.

JUNE

Educational Data Processing pg. 24

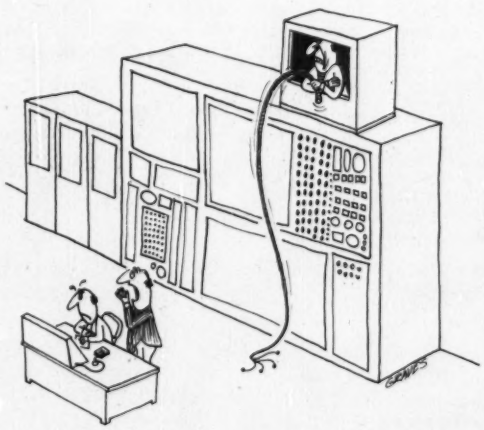
by Ed Yasaki

A summary of a three-day workshop in educational data processing conducted at System Development Corporation.

Programming On-Line Systems—Part Two pg. 28

by W. L. Frank, W. H. Gardner and G. L. Stock

Discussion of such on-line system requirements as queue monitoring and scheduling, I/0 monitoring, error detection and system recovery, diagnostics, communication monitoring, and interrupt handling.



"Personally . . . I could do without that new Accessory."

Programming Opportunities at Marquardt in California

Marquardt's expansion in the field of advanced propulsion systems has created an unusual opportunity for an experienced computer specialist to handle new and challenging assignments on planned installation of new equipment of IBM 7040/7044 systems.

IBM 7040/7044 SYSTEMS PROGRAMMING

Acquire and maintain a program controlled monitor system (IBSYS) for 7040/44. This monitor is expected to comprise IBCBC, IBFTC, IBMAP, IBLDR, IEDIT & OEDIT. Experience in Monitor Systems for the 700 or 7000 IBM computer series desired. U.S. Citizenship required.

Candidates are invited to direct resumés, including salary history, to Mr. Floyd N. Hargiss, Manager of Professional Personnel.

THE Marquardt CORPORATION

16555 Saticoy St., Van Nuys, California
An Equal Opportunity Employer

CIRCLE 93 ON READER CARD

COMPUTER PERSONNEL

WASHINGTON, D.C. and N.Y.
POSITIONS ARE NOW BEING FILLED THROUGH OUR SPECIALIZED PLACEMENT SERVICE

positions also available in other preferred locations

PROGRAMMING	ADVANCED TECHNIQUES
Applied	Compilers
Scientific	Languages
Administrative	Processors
COMPUTER DESIGN	TOTAL SYSTEMS

$7,000 — $20,000

all positions require bachelors, or advanced degree

ALL EXPENSES AND FEES PAID BY EMPLOYER

all inquiries treated confidentially

write or forward resume to

SYSTEMAT

"Serving the E.D.P. Industry"

in Washington, D.C.
1107 Spring Street
Silver Spring, Md.
JU 7-4200

in New York
Suite 3020
60 E. 42nd St.
New York, N.Y.
OX 7-1886

CIRCLE 95 ON READER CARD

DATAMATION'S FEATURE INDEX
JULY - DECEMBER, 1963

JULY

Communications Switching And Buffering Networks pg. 24
by John D. Beierle
Some of the general operating principles and functional requirements of communications switching and buffering networks are presented, with a distinction drawn between call and message switching systems.

Compiling In English pg. 28
by Jerry Schwalb
A three-page examination of GECOM includes descriptions of some of the applications programmed with an English-language compiler, advantages and disadvantages of using a COBOL-like language, future expectations and a time comparison chart of GECOM and GAP (General Assembly Program).

A Modern-Day Medicine Show pg. 31
by Robert L. Albrecht
An account of a course given to a group of gifted mathematics high school students on the use of the computer as a computational tool to assist in solving mathematical problems. The course culminated in a show staged completely by the students.

Building Internal Accounting Controls pg. 34
by S. M. Salvino
This article describes the design, use, performance and controls of a daily updating system (using an IBM 7090), for approximately one million customers at Peoples Gas Co., Chicago.

COBOL And Compatibility pg. 47
by Robert M. Gordon
A member of the ASA's X3.4.6 Glossary subcommittee presents a discussion of the definition of "compatible," as well as some of the benefits of COBOL.

AUGUST

Europe And the U.S. . . . The Widening Gap pg. 24
This special eight-page section is composed of three articles which deal with The European Computer Scene: 1963, Computers In Britain, and Cybernetics . . . A Soviet View (reprinted from USSR magazine).

The American Standard Code For Information Interchange pg. 32
by R. W. Bemer
The first of a two-part article includes background discussion of the present chaotic condition of information coding, independent efforts to deal with the code problem, and finally, development of the ASCII, with examination of its major features.

Visual Input To Computers pg. 37
by Dr. Roger L. Fulton
This three-page article, with diagrams, details the functions, features and applications of the cathode ray tube as an input device. Descriptions of several CRT-input applications are also given.

Standardization of Programming Languages pg. 41
by Howard Bromberg
An evaluation and discussion of domestic standards organizations; international standards efforts; subcommittee Five meeting; Czechoslovakian activity, Polish activity and ECMA reports; SC5 FORTRAN and ALGOL motions; ad hoc reports and anticipated progress.

Certificate in Data Processing pg. 59
The report outlines the objectives of the DPMA test and includes information on categories covered in the test. A partial study guide, listing recommended readings, is included.

SEPTEMBER

The Impact of Non-Impact Printing pg. 24
by Edward Webster
A survey of available types of electronic printing devices and descriptions of their operations includes matrix-electrostatic/electrosensitive printers, video-electrostatic printers, and video-photographic printers. A prediction concerning future use of electronic printers is made.

The Programmer Encounters Auditing pg. 31
by Harold Weiss
This article presents the problems associated with the marriage of data processing specialists and auditors. Listed are five suggested guidelines for record requirements for taxpayers using edp systems, a discussion of some of the auditor's main problems, and seven steps for helping to gain the auditor's confidence.

The American Standard Code For Information Interchange pg. 39
by R. W. Bemer
Part II in this series is concerned with both pro and con arguments regarding use of the code. Seven benefits the programmer might see if ASCII were to be built in as an internal computer code are detailed, and the outlook for the code is given.

OCTOBER

So You Want To Go On-Line pg. 25
by Robert L. Patrick
This article discusses the economics of computing, establishing criteria by which to evaluate the wisdom of developing on-line systems in which the programmer or problem-solver communicates directly with the computer.

Testing Programming Aptitude pg. 28
by Ascher Opler
This paper describes CUCPAT (Computer Usage Company Programming Aptitude Test), using an IBM 1401. Also included: discussion of test administration, evaluation of results, test validation and possible future developments.

The Operations Research Society of America pg. 32
by Robert B. Forest
A five-page interview with the president of ORSA provides an extensive description of Operations Research, a discussion of the construction of linear programming models of whole economies, training and education of operations research analysts, and ORSA membership.

Convention Remuneration Assembly Program System pg. 61
by William A. Logan
An enlightening paper, illustrated with flow charts, on strategy, money management and a system for playing the game of "21".

NOVEMBER

Contemporary Soviet Computers pg. 24
Detailed descriptions of the M-20, URAL-4, EPOS and UMShN Soviet computers, plus a table summarizing various characteristics of several new Soviet designs are offered in this five-page article.

Northrop Sets A Pattern pg. 39
by William J. Rolph
The author describes the means by which Northrop hopes to establish centralized corporate management control over decentralized computing activities.

Computing At Stanford pg. 43
by Edward K. Yasaki
Information on the newly dedicated computation center, its personnel, facilities, hardware, software and goals.

Packaging A Course In Computing pg. 48
by Fred Gruenberger
A discussion of the need for, and methods of training high school teachers and students in computing, with emphasis on the use of educational video films.

The Computer And Programmed Instruction pg. 50
by Werner J. Koppitz
An experimental computer-based instruction system is described after a background discussion of the evolution of programmed instruction. Initial results of the experimental program and future developments are given.

DECEMBER

A special five-article section dedicated to random access files includes topics on file management, interchangeable random access discs, card random access memory, random access file system design, and storage devices. A two-page chart on characteristics of random access storage devices is included.

Programmer Training: A Workable Approach pg. 48
by James A. Saxon
A description of the results of a programmer training course making use of a programmed text with comparisons of costs with classroom instruction.

Costing Processed Data pg. 53
by F. J. Dahlhaus
A work sampling technique as a method for determining the cost per unit of data processing production is highlighted in this article.